

shaft in the machining device, when providing cooling/lubricating function for a rotating shaft in a machining device in operation already installed in a plant etc., not in a newly manufactured machining device, the replacement of this rotating shaft must be initiated first, which constitutes a drawback of installing cost increase. In addition, even in a machining device with a rotating shaft to which a supply passage for cooling/lubricating medium is attached, a drawback is also pointed out that, when the inside diameter of the rotary tool to be mounted on the machining device is not coincident with the outside diameter of the rotating shaft, it becomes impossible to mount the rotary tool thereon, so that many of various commercially available rotary tools cannot be used.

Object of the Invention

The present invention is proposed in order to suitably solve the aforementioned drawbacks which exists in a cooling/lubricating mechanism of the conventional rotary tools, and aims to provide means which is designed to smoothly supply mist to a rotary tool in rotation, without involving a rotary shaft to which the rotary tool is attached, so as to easily add the cooling/lubricating mechanism to an already installed machining device and to achieve free selection/use of a rotary tool from various commercially available rotary tools having an inside diameter not coincident with the outside diameter of the rotating shaft.

Means for solving the Problems

In order to overcome the above problems and achieve the preset object, the present invention comprises a mist supply mechanism for supplying mist under pressure to a rotary tool disposed around a rotating shaft, and implementing cooling and/or lubricating of the rotary tool during workpiece-machining,

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characterized in that the rotary tool is disposed around a sleeve with a required length circumferentially engaging with the rotating shaft;
a plurality of mist supply passages extending in the axial direction are provided on the sleeve;
and the mist is supplied to the rotary tool through the mist supply passage.

Brief description of the drawings

Fig. 1 is a longitudinal cross section of a mist supply mechanism for a rotary tool according to the preferred embodiment of the invention.

Fig. 2 is an enlarged cross section of a rotary seal section in the mechanism shown in fig. 1.

Fig. 3 is a transverse cross section taken along the line III – III of Fig. 2.

Fig. 4 is a longitudinal cross section of the rotary seal section shown in Fig. 2 with a sleeve and a rotating shaft being removed.

Fig. 5 is a transverse cross section taken along the line V – V of Fig. 4.

Fig. 6 is an enlarged perspective view of a main part of the mist supply mechanism according to the embodiment with a part being notched.

Fig. 7 is an enlarged view of a part surrounded by a dash-single-dot line of Fig. 1.

Fig. 8 is a longitudinal cross section of a mist supply mechanism according to another embodiment of the invention.

Fig. 9 is a longitudinal cross section of a mist supply mechanism according to yet another embodiment of the invention.

Embodiment of the Invention

Next, a mist supply mechanism for a rotary tool of the invention is described hereinbelow referring to attached drawings and illustrating the preferred embodiment. Although the present embodiment illustrates a gang saw mainly for cutting wood wherein a multiplicity of circular saws are

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